

WHAT IS CLAIMED IS:

1 1. For use in a wireless communication network comprising at
2 least one base station and a plurality of mobile stations, an
3 apparatus for providing concurrent data transmissions from said
4 base station to said plurality of mobile stations, said apparatus
5 comprising:

6 a register unit in a base transceiver station of said base
7 station, said register unit capable of causing data packets of a
8 first data call to be concurrently transmitted during at least one
9 subframe of a data frame comprising N subframes.

1 2. The apparatus as set forth in Claim 1 wherein said
2 register unit is capable of causing data packets of a second data
3 call to be transmitted during at least one subframe of said data
4 frame comprising N subframes other than said subframe used by said
5 first data call.

1 3. The apparatus as set forth in Claim 2 wherein said data
2 packets of said second data call comprise an emergency message.

1 4. The apparatus as set forth in Claim 1 wherein said
2 register unit is capable of causing data packets of a first data
3 call to be concurrently transmitted during a first subframe of a
4 data frame comprising three subframes.

1 5. The apparatus as set forth in Claim 4 wherein said
2 register unit is capable of causing data packets of a second data
3 call to be transmitted during one of: a second subframe of said
4 data frame and a third subframe of said data frame.

1 6. The apparatus as set forth in Claim 5 wherein said data
2 packets of said second data call comprise an emergency message.

1 7. The apparatus as set forth in Claim 1 wherein said
2 register unit comprises:

3 a register main unit capable of receiving from said base
4 transceiver station a plurality of data packets to be transmitted
5 to a plurality of cell sectors, and capable of identifying a cell
6 sector destination for each of said plurality of data packets;

7 a register location unit coupled to said register main unit,
8 said register location unit capable of providing to said register
9 main unit information concerning said plurality of data packets;
10 and

11 a plurality of buffers coupled to said register main unit,
12 each of said plurality of buffers associated with a cell sector,
13 each of said buffers capable of receiving data packets from said
14 register main unit to be transmitted to a respective cell sector.

1 8. The apparatus as set forth in Claim 7 wherein each buffer
2 of said plurality of buffers is capable of storing a portion of
3 data packets of a first data call in at least one subframe of a
4 data frame comprising N subframes, and capable of causing said
5 portion of data packets of said first data call to be concurrently
6 transmitted by an antenna.

1 9. The apparatus as claimed in Claim 8 wherein each buffer
2 of said plurality of buffers is capable of storing a portion of
3 data packets of a second data call in at least one subframe of said
4 data frame comprising N subframes other than ,said subframe used by
5 said first data call.

1 10. The apparatus as set forth in Claim 9 wherein said data
2 frame comprises three subframes and said plurality of buffers
3 comprises three buffers.

1 11. A wireless communication network comprising:
2 a plurality of mobile stations;
3 at least one base station capable of communicating with said
4 plurality of mobile stations;
5 wherein said at least one base station comprises an apparatus
6 for providing concurrent data transmissions from said base station
7 to said plurality of mobile stations, said apparatus comprising:
8 a register unit in a base transceiver station of said base
9 station, said register unit capable of causing data packets of a
10 first data call to be concurrently transmitted during at least one
11 subframe of a data frame comprising N subframes.

1 12. The wireless communication network as claimed in Claim 11
2 wherein said register unit is capable of causing data packets of a
3 second data call to be transmitted during at least one subframe of
4 said data frame comprising N subframes other than said subframe
5 used by said first data call.

1 13. The wireless communication network as set forth in
2 Claim 12 wherein said data packets of said second data call
3 comprise an emergency message.

1 14. The wireless communication network as set forth in
2 Claim 11 wherein said register unit is capable of causing data
3 packets of a first data call to be concurrently transmitted during
4 a first subframe of a data frame comprising three subframes.

1 15. The wireless communication network as set forth in
2 Claim 14 wherein said register unit is capable of causing data
3 packets of a second data call to be transmitted during one of:
4 a second subframe of said data frame and a third subframe of said
5 data frame.

1 16. For use in a wireless communication network comprising at
2 least one base station and a plurality of mobile stations, a method
3 for providing concurrent data transmissions from said base station
4 to said plurality of mobile stations, said method comprising the
5 steps of:

6 providing a register unit within a base transceiver station of
7 said at least one base station; and

8 causing data packets of a first data call in said register
9 unit to be concurrently transmitted during at least one subframe of
10 a data frame comprising N subframes.

1 17. The method as set forth in Claim 16 further comprising
2 the step of:

3 causing data packets of a second data call in said register
4 unit to be transmitted during at least one subframe of said data
5 frame comprising N subframes other than said subframe used by said
6 first data call.

1 18. The method as set forth in Claim 17 wherein said data
2 packets of said second data call comprise an emergency message.

1 19. The method as set forth in Claim 16 further comprising
2 the step of:

3 causing data packets of a first data call to be concurrently
4 transmitted during a first subframe of a data frame comprising
5 three subframes.

1 20. The method as set forth in Claim 19 further comprising
2 the step of:

3 causing data packets of a second data call to be transmitted
4 to one of: a second subframe of said data frame and a third
5 subframe of said data frame.

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